EMPERATURE SENSORS

PERATURE SENSORS FOR AMPLIFIER ST 010 AND RELAYS 15 – ST 119 – ST 185

netering the temperature of liquids (metering range: –20 to +120°C).

6 a ETR 61: Nickel plated brass sensor
ETR 62: White teflon sensor
} Fit into screw-in pipe type ETO*).

9 Nickel-plated brass sensor for screwing in with external 3/8" pipe thread.

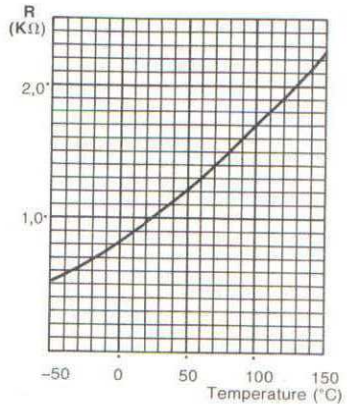
netering the temperature of air (metering range: –20 to +60°C).

7 Housing made of NORYL SE 1, light grey.
Mounted on wall or ceiling by 2 screws.

netering surface temperature (metering range: –20 to +120°C).

10 Nickel-plated brass enclosure.
Attached to plane metallic surfaces by 2 screws*).

Resistance as function of temperature.



IFICATIONS

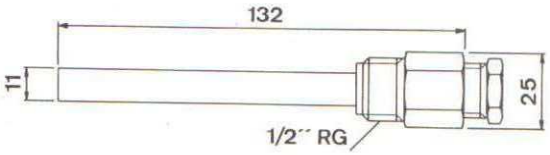
Sensor type:	PTC resistance sensor.
Tolerance:	Typ. 1,5°C at 25°C and 2°C at 100°C.
Power loss in sensor:	0.3 mW.
Change of resistance:	0.75%/°C – R = 817 Ω/0°C.
Thermal time constant:	ETR 6 and 9: 12 sec. ETR 7: Still air: 14 min. Air flow: 1 min. ETR 10: Max. 1 min.
Connection cable:	(Does not apply to ETR 7). Silicone cable, grey, unscreened, heat resistant to 250°C. 2 core, 2 × 0.38 mm². Standard length: 1 metre.
Terminal block:	(Apply to ETR 7 only). 2-pole.
Accesories:	(Apply to ETR 61 and 62 only). Screw-in pipe, type ETO.
Mechanical design:	As ETS-sensors with the same number.
Dimensions:	As ETS-sensors with the same number.

*) For improvement of the heat conduction between the ETR 6 – sensors and the ETO-pipe, as well as between the ETR 10 – sensor and a metallic surface, silicone paste should be used.

Screw-in pipe for temperature sensors ETR 6, ETS 1, ETS 2, and ETS 6.



Material:	Brass.
Temperature:	Max. 300°C.
Pressure:	Max. 50 atm.
Thread:	1/2" pipe thread, external.



UMENTS

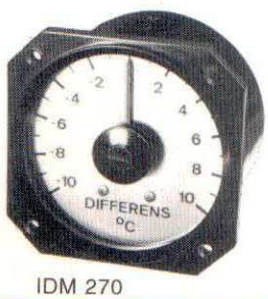
-coil instruments for indication of nperature by use of amplifiers and relays. e individual catalogue pages.


ID 120

NICAL DATA

ale on:	1 mA.	
nce:	Type ID 120: Type ID 270 – IDM 270:	110Ω. 300Ω.
nical ions:	Type ID 120:	
	Front frame: Panel outcut: Mounting depth:	42×48 mm (h×w). ∅ 38 mm. 33 mm.
	Types ID 270 – IDM 270	
	Front frame: Panel outcut: Mounting depth:	83×83 mm. ∅ 80 mm. 55 mm.


ID 270



IDM 270

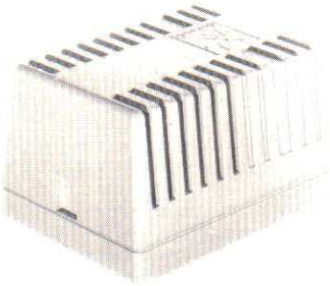
TEMPERATURE SENSORS



ETS 6
ETR 6



ETS 9
ETR 9



ETS 7
ETR 7
ETS 8 (knob-adjustable)



ETS 10
ETR 10

TEMPERATURE SENSORS FOR AMPLIFIER ST 040 AND RELAYS ST 100 - ST 105 - ST 145 - ST 175

For metering the temperature of liquids (metering range: –20 to +120°C)

ETS 6 ETS 61: Nickel-plated brass sensor
ETS 62: White teflon sensor
} Fit into screw-in pipe type ETO*).

ETS 9 Nickel-plated brass sensor for screwing in with external 3/8" pipe thread.

For metering the temperature of air (metering range: –20 to +60°C).

ETS 7 Housing made of NORYL SE 1, light grey.
Mounted on wall or ceiling by 2 screws.

ETS 8 Housing made of NORYL SE 1, light grey.
Mounted on wall or ceiling by 2 screws.
Temperature adjustable by built-in potentiometer.

For metering surface temperature (metering range: –20 to +120°C).

ETS 10 Nickel-plated brass enclosure.
Attached to plane metallic surfaces by 2 screws*).

SPECIFICATIONS

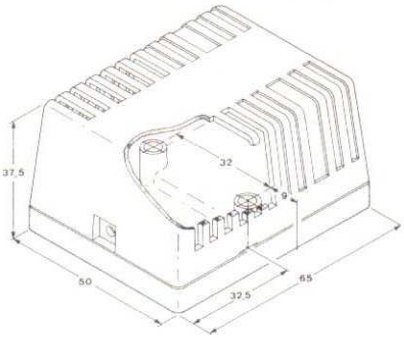
Sensor type:	Semi-conductor sensor.
Tolerance:	Typ. 1°C.
Power loss in sensor:	0,7 mW.
Voltage change:	2.16 mV/°C.
Thermal time constant:	ETS 6 and 9: 12 sec. ETS 7 and 8: Still air: 14 min. Air flow: 1 min. ETS 10: Max. 1 min.
Connection cable:	(Does not apply to ETS 7 and ETS 8.) Silicone cable, grey, unscreened, heat resistant to 250°C. 3-core, 3 × 0,25 mm². Standard length: 1 metre. If extension necessary: See table of error in indication.
Terminal block:	(Applies to ETS 7 and ETS 8 only). 2-pole.
Accessories:	(Apply to ETS 61 and ETS 62 only). Screw-in pipe, type ETO.

*) For improvement of the heat conduction between the ETS 6-sensors and the ETO-pipe, as well as between the ETS 10-sensor and a metallic surface, silicone paste should be used.

DIMENSIONAL DRAWINGS

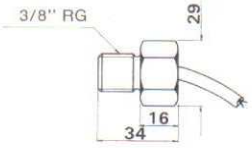
ETS 6
ETR 6

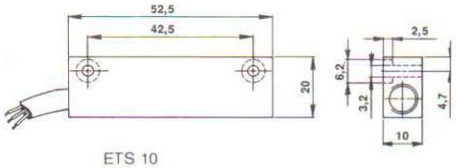




ETS 7
ETR 7
ETS 8 (knob-adjustable)

ETS 9
ETR 9





ETS 10
ETR 10

DIAGRAM OF INDICATION ERROR = F (CABLE LENGTH/SECTIONAL AREA) BY APPLICATION OF TEMPERATURE SENSORS ETS 6 - ETS 7 - ETS 8 - ETS 9 and ETS 10.

Cable length	Cross-sectional area					
	□ 0,75 mm²		□ 1 mm²		□ 1,5 mm²	
	Ω	Error	Ω	Error	Ω	Error
10 metres	0.23	–0.1°C	0.17	0	0.11	0
25 metres	0.57	–0.3°C	0.43	–0.2°C	0.29	0.15°C
50 metres	1.15	–0.6°C	0.86	–0.4°C	0.57	–0.3 °C
100 metres	2.3	–1.2°C	1.72	–0.8°C	1.1	–0.6 °C